# Postdoctoral Fellowship – CSOF4

The following information is for applicants

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| Advertised Job Title**:** | Postdoctoral Fellowship in Crop Physiology and Modelling |
| Job Reference | 58087 |
| Relocation Assistance**:** | Will be provided to the successful candidate if required. |
| Applications Are Open To: | [ ]  Australian Citizens Only[ ]  Australian/New Zealand Citizens and Australian Permanent Residents Only* [x]  All Candidates
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| Percentage of Client Focus - Internal: | 0% |
| Percentage of Client Focus - External: | 100% |
| Reports to the: | Project Leader |
| Number of Direct Reports: | 0 |
| Name and Contact Details For Applicant Enquiries  | Dr Scott Chapman via email Scott.Chapman@csiro.au  |
| Contact Details For Applying | Call 1300 984 220 or email csiro-careers@csiro.au.  |

**Role Overview:**

Postdoctoral Fellowshipsat CSIRO provide opportunities to scientists and engineers who have completed their doctorate and have less than three (3) years relevant postdoctoral work experience. These Fellowships will help launch their careers, provide experience that will enhance their career prospects, and facilitate the recruitment and development of potential leaders for CSIRO.

Postdoctoral Fellows are appointed for up to three years (2.5 years in this case) or part time equivalent and work closely with a CSIRO Research Scientist or Engineer in their respective field. They carry out innovative, impactful research of strategic importance to CSIRO with the possibility of novel and important scientific outcomes. They present the findings in appropriate publications and at conferences.

This position is part of an international research project on adaptation of wheat that is co-funded by CSIRO and the Grains Research and Development Corporation under the International Wheat Yield Partnership (IWYP). In the project, we will use the APSIM Cropping Systems model, a software system co-developed by CSIRO, in conjunction with datasets from partners in Australia, UK (John Innes Centre), Mexico (CIMMYT), Spain (U Lleida) and Argentina (U Buenos Aires). The objective is to use the model to simulate the growth of spring wheat across global locations where it is sown, in order to provide information on how to genetically improve the yield of wheat through manipulation of development processes that affect flowering time and grain number per unit area. This will inform public and private wheat breeding programs and assist in the development and geographical targeting of new varieties with higher yield.

**Duties and Key Result Areas:**

* Under the direction of senior research scientists, carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
* The main duties in the project are:
	+ Collation and organisation of datasets from past research done by project partners and as published in the literature or by other researchers in CSIRO and elsewhere.
	+ Data are used in two ways: (1) analysis to develop new algorithms that improve the capability of the wheat model to simulate flowering time and grain number and (2) in validation to check the functionality of the simulation model.
	+ Collation and simulation analysis of wheat flowering time, growth and yield across global key reference locations which have been selected in conjunction with wheat agronomists and breeders. These results will be used in preparation of project reports, papers and web-based delivery tools based on these results.
* Undertake regular reviews of relevant literature and patents.
* Produce high quality scientific and/or engineering papers suitable for publication in quality journals, for client reports and granting of patents.
* Prepare appropriate conference papers and present those at conferences as agreed with your supervisor.
* Contribute to the development of innovative concepts and ideas for further research.
* Make a contribution to the effective functioning of the research team and help deliver CSIRO’s organisational objectives and plans.
* Work collaboratively with colleagues within your team, the business unit and across CSIRO.
* Communicate effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Undertake an appropriate training and development program developed by CSIRO.
* Other duties as directed.

**CSIRO’s postdoctoral training program** is developed between the Postdoctoral Fellow and a CSIRO scientist or engineer. The program will focus on enhancing the Fellows’ capabilities to the level expected of an independent researcher and will include on-the-job and course-based development encompassing:

* Discipline-specific techniques and protocols
* Professional growth
* Project management
* Communication and influencing skills
* Working and collaborating with others

<http://www.csiro.au/en/Careers/Student-and-graduate-programs/Postdoctoral-fellowships>

**Selection Criteria:**

*Under CSIRO policy only those who meet all essential criteria can be appointed*

***Pre-Requisites:***

1. **Education/Qualifications:** A doctorate (or will shortly satisfy the requirements of a PhD) in a relevant discipline area, such as crop physiology, agronomy, modelling and breeding*.*

***Please note:*** *To be eligible for this role you must have no more than 3 years (or part time equivalent)**relevant postdoctoral experience.*

1. **Communication: High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including at national and international conferences.**
2. **Publications: A record of publications in quality, peer reviewed journals.**
3. **Behaviours:** A history of professional and respectful behaviours and attitudes in a collaborative environment.

***Essential Criteria:***

1. Training in relevant area of crop physiology, agronomy, modelling or breeding and clear understanding of the physiology of crop adaptation, especially as pertaining to flowering time and grain development.
2. Demonstrated experience in the statistical analysis of datasets from agricultural trials and interpretation/computation of physiological parameters, especially as related to environmental factors.
3. Experience in, or demonstrated capability to develop skills in the development and improvement of algorithms in crop simulation models.
4. At least three years of experience and demonstrated skills in the use ofcomputer programs to manipulate and analyse agronomic data. This may include experience gained through PhD research.
5. **The ability to work effectively as part of a multi-disciplinary, regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.**
6. A record of science innovation and creativity, plus the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

**Desirable Criteria:**

1. Experience in physiology and modelling in small-grain cereals, preferably in field environments.
2. Background in genetics and/or molecular biology especially as related to control of flowering time and grain development.
3. Programming skills in computing languages R (for analysis) and C++/C# (APSIM).

To be appointed as a Postdoctoral Fellow within CSIRO, candidates are required to have submitted their PhD at the time of commencement, as a minimum requirement, if PhD conferment has not been obtained. If a candidate has submitted, but their PhD has not yet been formally granted, the starting salary will be CSOF4-1 ($80,833)*.* When CSIRO receives written confirmation that the PhD has been awarded (within a six month period from commencement date), the salary will be increased to the negotiated level and the difference will be back-paid to the Officer’s start date.

**Other Information:**

***How to Apply:***

Please apply online at <https://jobs.csiro.au/> and enter requisition number **58087**. Internal applicants please apply via ‘Jobs Central’ through the ‘People Hub’

Please do not email your application directly to CSIRO contacts. Applications received via this method may not be considered by the selection panel.

**About CSIRO:**

At CSIRO, we do the extraordinary every day. We innovate for tomorrow and help improve today – for our customers, all Australians and the world.

We imagine. We collaborate. We innovate.

[More about CSIRO](http://www.csiro.au/)

**About Agriculture:**

Our Agriculture and Food team is helping Australian farmers and industry improve productivity and sustainability.